

XXII.—New Species of Geometers and Pyrales from the Khasia Hills. By Col. C. SWINHOE, M.A., F.L.S.

Tribe GEOMETERS.

Family Geometridæ.

Genus MAXATES, Moore.

1. *Maxates xanthochlora*, sp. n.

♂. Antennæ, palpi, head, and body greenish grey. Wings above dull green: fore wings with the inner two thirds pale greenish grey, containing a large green spot at the end of the cell and an incomplete green subbasal band; hind wings with the basal fourth grey, including a green spot. Underside greyish white, with green cell-spots and marks, and a broad discal greenish band across both wings, broader on hind wings, uniform and not reaching the costa on fore wings.

Expanse of wings  $\frac{3}{10}$  inch.

Cherra Punji. One example.

Family Acidalidæ.

Genus ANISODES, Guen.

2. *Anisodes hyperythra*, sp. n.

♂. Palpi beneath and shafts of the antennæ and top of head whitish; plumes of the antennæ, body, and wings above of a uniform brick-dust colour, densely irrorated with very minute brown atoms. Hind wings with a large black spot with white pupil at the end of the cell, in some examples the spot is white with merely a black rim; both wings with indications of several transverse grey bands, very indistinct, and only visible in certain lights. Underside with the body, legs, and wings of a uniform pale pinkish grey, unmarked.

Expanse of wings  $1\frac{1}{2}$  inch.

Cherra Punji. Many examples.

Closely resembles *Perixera absconditaria*, Walker.

3. *Anisodes discofera*, sp. n.

♂. Pale dull straw-colour, sparsely irrorated with brown atoms. Wings crossed by indistinct grey sinuous lines—first subbasal, more apparent on hind wings; second medial, touching a large brown spot in the centre of each wing, the spot or patch very large on the fore wings; third discal, with black points on the veins, touching a brown patch above middle on the fore wings; fourth submarginal, almost obsolete on fore wings; the margin with black points in the inter-

spaces. Underside paler, without irrorations, with a discal row of brown points on fore wings and some small brown marks.

Expanse of wings  $1\frac{2}{10}$  inch.

Cherra Punji. Three examples.

Allied to *Anisodes heydena*, Swinh.; patches somewhat similarly disposed, but the transverse lines are sinuous, in *heydena* they are prominent and straight.

#### Genus CHRYSOCRASPEDA, Warren.

##### 4. *Chrysocraspeda plumbeofusa*, sp. n.

♂. Of a uniform ochreous-red colour, the entire fore wing except the discoidal area and the costal area of hind wings suffused with a lead-coloured glaze. Fore wings with a large black lunular spot at the end of the cell, and with a few brown striations near the outer margin: hind wings with a small white spot ringed with brown at the end of the cell; cilia of both wings ochreous. Underside: fore wings pale black, with pale red apex and outer marginal space; hind wings pale red, with black suffusion at the base.

Expanse of wings  $1\frac{1}{10}$  inch.

Cherra Punji. One example.

Nearest to *C. abhadraca*, Walker.

#### Family Larentiidae.

#### Genus CIDARIA, Treit.

##### 5. *Cidaria subapicalis*, sp. n.

♂. Frons, head, and fore part of thorax ochreous grey; the remainder of thorax and abdomen darker. Fore wings pale ochreous brown, crossed by subbasal, antemedial, and postmedial sinuous brown bands, each intersected by a black line and edged by a black line on each side; the outer band has a pale line outside the black line, followed by another blackish-brown line, and has two outward dentations in its centre; in one example the two outer bands have the space between them suffused with black, forming one broad central band; a brown short band on the outer margin below the costa, angled inwards with two small dentations, which are edged with black, and two or three indistinct lunulate transverse brown lines in the pale discal space: hind wings pale ochreous brown, whitish on costal space. Underside with inner two thirds of fore wings black except the costal space, broadly brown on outer margin, leaving a broad ochreous-grey discal band, a small black spot at end of cell; hind

wings ochreous grey, densely irrorated with brown atoms, and with a prominent black spot at end of cell.

Expanse of wings  $1\frac{6}{10}$  inch.

Cherra Punji. Two examples.

Family **Boarmiidæ.**

Subfam. *DELLINIINÆ.*

Genus **MYRTETA**, Walker.

6. *Myrteta fuscolineata*, sp. n.

♀. Pure white, with some grey irrorations, thickest on costa of fore wings; a grey dot at the end of each cell; greyish-brown transverse lines very indistinct, first from basal third of abdominal margin of hind wings, and second from the middle of the margin, both terminating at the apex of fore wings; the first double on fore wings, only the second double throughout; another very indistinct line outside the second line, also a more distinct grey marginal line. Underside pure white and unmarked.

Expanse of wings  $1\frac{3}{10}$  inch.

Cherra Punji. One example.

Allied to *Myrteta brunneiceps*, Warren, of which I have both sexes; the transverse lines (which in that species are ochreous and very distinct) are somewhat similarly disposed, but the shape and ground-colour are very distinct, and the head of *brunneiceps* in both sexes is bright ochreous.

Subfamily *ENNOMIINÆ.*

Genus **FASCELLINA**, Walker.

7. *Fascellina hypochlora*, sp. n.

♂. Antennæ, palpi, and frons dark red; thorax olive-green; abdomen olive-grey. Wings dark olive-green, smeared in parts with greyish white, fairly uniform in tint of colour, striated with black near the base and on the basal half of costa of fore wing, which has an antemedial transverse blackish thin band, nearly straight and acutely bent inwards on to the costa, where it is darkest; a broader dark green postmedial diffuse band, also nearly straight; a discal pale line angled outwards below the costa near the apex, which has a white smear, then sinuous downwards to the hinder margin nearly parallel with the outer margin, and across the hind wing a little beyond the middle, edged throughout with dark green on each side, and accompanied on the hind wings by a broad dark green central band, which narrows towards the costa; cilia of both wings dark green. Underside pale green, tinged with yellow at the base of fore wings and over the whole

surface of hind wings, and striated throughout with black; fore wing with the white discal line with its inner side broadly black from costa halfway down, also black on costa at apex; below this apical patch there is a white space on the margin, and the inner costal space is also broadly white; hind wing with the discal line black, and another similar line between it and the margin.

Expanse of wings  $1\frac{6}{10}$  inch.

Cherra Punji. One example.

The hinder margin of fore wings is not excavated as in *F. chromataria*, Walk., and *F. plagiata*, Walk.

#### 8. *Fascellina hypochriseis*, sp. n.

♂. Antennæ and palpi reddish brown; head, body, and wings of a uniform olivaceous ochreous brown. Fore wings with a brown line from just before middle of costa, forming a small loop to the costa again before the apex, and then bending down below the apex; in the apical bend is a white streak, and both loops are smeared with white; the basal portion of the costa up to commencement of first loop is pale pink with brown irrorations; a white lunule at the end of the cell (absent in one example) and indications of two straight transverse dark thin bands, one before and the other beyond the middle, almost touching the outside of the lunule. Under-side with the fore wings bright yellowish grey, smeared with white and striated with brown, with a white transverse discal line elbowed outwards below the costa, the elbow filled with rich chestnut-brown, which runs in a thin band close along the inner side of the white line; the outer portion of the wing pale grey at the upper and dark olive-coloured in its lower parts; hind wings bright ochreous at the base and tinged with orange on the outer portions, with a curved discal row of orange spots, ending in two dark orange-red lines on the costa.

Expanse of wings  $1\frac{4}{10}$  inch.

Cherra Punji. Five examples.

With the hinder margin of fore wings excavated near the angle.

#### Subfamily *MACARIINÆ*.

#### Genus *MACARIA*, Curtis.

#### 9. *Macaria octolinearia*, sp. n.

♂. Grey, thickly irrorated with brownish-grey atoms; transverse lines antemedial, medial, discal, and marginal, greyish brown, all outwardly edged with whitish; the first obsolete on hind wings, the first and second nearly straight, the second crossed by a transverse brown short streak on

costa of fore wings, which crosses end of cell ; the discal line sinuous and outwardly curved, running through a square black spot or patch above middle of fore wings, and above it a smaller black spot through which the line also runs ; a submarginal pale shade or band from costa near apex to the hinder angle. On the underside the wings are of a whitish ground-colour, densely striated in parts with blackish brown, with central and discal blackish shades or bands, and with submarginal pale spots on the fore wings ; a discal black line runs through the discal shades and the entire surface of both wings has a pretty marbled look.

Expanse of wings  $1\frac{2}{10}$  inch.

Cherra Punji. Three examples.

The black discal patch on fore wings gives the insect somewhat the appearance of *M. oliva*, Swinh., but the hind wings have the centre produced into a tail, as in *M. emer-saria*, Walker, and the lines are very distinctively disposed.

Genus KRANANDA, Moore.

10. *Krananda oliveomarginata*, sp. n.

♂. Fore wings more falcate than in *K. semihyalina*, Moore ; outer margin not toothed, only slightly scalloped between the veins ; palpi and frons tinged with orange ; a few orange hairs on the collar ; thorax and abdomen olive-grey. Wings grey, semihyaline, but better clothed than in the type species, striated with olive-grey, forming two or three small patches on the costa and the base and the hinder margin beyond the middle ; a broad marginal olive-grey band covering the outer third of fore wings and nearly half of hind wings, with the inner margin sinuous and accompanied by a pale line formed by a grey inner line ; apex of fore wings pale, with a sub-apical pale sinuous short streak downwards from costa. Hind wings with a submarginal pale sinuous streak from the anal angle, ending in the interspace before vein 7 ; a small black dot at the end of each cell in both wings.

Expanse of wings  $1\frac{6}{10}$  inch.

Cherra Punji. One example.

Subfamily BOARMINÆ.

Genus BOARMIA, Treit.

11. *Boarmia glaucodisca*, sp. n.

♂ ♀. Antennæ of male brown, pectinated as in *B. admis-saria*, Guen. ; in the female they are simple, brown, with pale joints ; head and thorax brown ; abdomen grey, tinged with pale pink. Fore wings glaucous grey, irrorated with brown atoms, which are fewest in the disk ; a black lunular promi-

ment spot at the end of the cell; indications of an interior brown transverse line; a median brown line with black marks on the veins, duplex in the female; a similar inner line running up and curving inwards on to the costa round the cell-spot; a submarginal pale sinuous line, marked with black along its inner border, marginal black lunules in the interspaces: hind wings grey, tinged with pale pink, the tinge being deepest in the outer portions, where there are some brown striations; the basal portions are pale, and in some examples nearly white, and limited by a brown median sinuous band with black markings on the veins; a short similar subbasal band, also an indistinct submarginal band; in one example these bands are prominent, in others they are more or less obsolete; a black dot at end of cell and a black lunular marginal band. On the underside the wings are nearly pure white, with a broad black marginal band on fore wings and at apex of hind wings, with the black cell-spots large and prominent and the transverse lines more or less visible.

Expanse of wings  $1\frac{4}{10}$ – $1\frac{6}{10}$  inch.

Cherra Punji. Four males, one female.

### Tribe PYRALES.

#### Family Pyralidæ.

#### Subfamily PYRALINÆ.

#### Genus OMPHALOMIA, nov.

♂. Fore wing twice as long as broad; costa bulged at base, with a strong fold beneath, reaching nearly one third of the length, concave in the middle, and convex again towards apex; apex blunt, outer margin slightly curved: hind wings with the angles rounded. Fore wings beneath with a tuft of hair-like scales along the subcostal, in the cell, and along the submedian fold. Antennæ simple; forehead hairy below; palpi flattened laterally, drooping, hairy.

Type: *Omphalomia accersita*.

Superficially very much like *Omphalocera*, but distinguished at once by the simple antennæ of the male and the tufts of hair-like scales on the under surface of the fore wings.

#### 1. *Omphalomia accersita*, sp. n.

♂. Palpi brown, ochreous on the inner sides; head, body, and wings dark brown. Fore wings with the veins darker and some darker suffusions in parts; a small ochreous-grey subcostal streak near the base, a similarly coloured streak or line commencing at the costa close above the outer end of the short subbasal streak, and terminating at the lower end of the

cell; a large, similarly coloured, rounded patch at the apex, with some brownish marks in it, ochreous-grey marginal points on the veins; cilia ochreous grey, thickly patched with brown: hind wings brown, paler than fore wings, uniformly coloured, unmarked except for some slight indications of a discal band; cilia concolorous with the wing, with a pale line at the base. Underside uniform brown; an ochreous subapical patch on costa and a band across the disk of both wings composed of ochreous marks on the veins; cilia brown, with a pale basal line; body and legs brown.

Expanse of wings  $1\frac{3}{10}$  inch.

Cherra Punji. One example.

A female taken by me some years ago on the Khandalla Mountains, near Bombay, is in the B. M. collection.

### Genus MICROMANIA, nov.

♂. Fore wings twice as long as broad; costa straight, apex rounded, outer margin bowed. Hind wings with rounded outer margin. Palpi porrect, rostriform; maxillary palpi porrect above labial; antennæ of male shortly ciliated; legs long, hind tibiæ with four spurs.

Type: *Micromania stigmatalis*.

#### 2. *Micromania stigmatalis*, sp. n.

♂ ♀. Palpi black; antennæ, head, body, and wings dark brown. Fore wings with a large black reniform stigma at the end of the cell, with subbasal, interior, and exterior brown lines, the first and second uniformly curved outwards, the outer line much waved; it curves inwards and upwards at vein 3 and round the stigma, then zigzags down to the hinder margin, and is edged with pale ochreous grey outwardly; the two last lines are continued across the hind wings until they meet above the anal angle; beyond the outer line there is a dark band on both wings, a submarginal and a marginal row of ochreous-grey lunules, black marginal line, and interlined cilia, grey and brown. Underside: body, legs, and wings grey; wings with markings as above, with the addition of a black spot at the end of cell of hind wings.

Expanse of wings  $1-1\frac{3}{10}$  inch.

Shillong and Cherra Punji. Many examples of both sexes.

### Subfamily PYRAUSTINÆ.

#### Genus SPILODES, Guen.

#### 3. *Spilodes pallidulalis*, sp. n.

♂. Of a uniform pale ochreous grey above; legs and body beneath white; palpi, frons, and pectus darker and more

ochreous. Hind wings concolorous with fore wings; lines on fore wings hardly visible; an interior sinuous line from the hinder margin at one third to the costa at one fifth; an outer dentated outwardly curved line from the hinder margin at the middle to the costa at one fifth from apex. Hind wing with very faint indications of a sinuous, outwardly curved, discal line. Underside: fore wings with the space from and including the cell upwards suffused with dark grey; a grey apical band; a discal grey line or thin band, not corresponding with the line above, but more inwards, and partly running across hind wing, and brown marginal lunules on both wings.

Expanse of wings  $1\frac{1}{10}$  inch.

Cherra Punji. Three examples.

#### Genus PILOPTILA, nov.

♂. Allied to the dark fuscous group of *Opsibotys*, Warren, but characterized by a thick fold of hairs, reaching for one fifth from the base of the costa of fore wings and lying along the underside, but generally visible from above; palpi shortly rostriform; tongue rather strongly developed; antennæ pubescent.

Type: *Piloptila nigricornalis*.

#### 4. *Piloptila nigricornalis*, sp. n.

♂. Palpi dark red-brown, white beneath; antennæ, head, body, and wings of a uniform pale fuscous. Wings with a black comma-shaped mark at the end of each cell: fore wings with a black dot in the cell and the interior line below it; both wings with the exterior line blackish, much bent outwards in the middle, the incurve on fore wings well apart from the cell-spot, the line ending in a thick blackish mark on hinder margin at two thirds; cilia of both wings pale greyish. Underside pale grey, markings as above, but very distinct; cilia with a black interline of disconnected marks; body and legs white.

Expanse of wings 1 inch.

Cherra Punji. Three examples.

#### Genus OPSIBOTYS, Warren.

#### 5. *Opsibotys benenotata*, sp. n.

♂. Palpi dark brown, white beneath; antennæ, head, body, and wings olive-brown. Wings glossy, with the spots and lines black and distinct: fore wings with a lunular mark at the end of the cell and a small spot within the cell, just in front of the interior line, which is slightly waved and extends from costal fifth to the hinder margin more than one third from



base; the outer line commences with a black spot on costa one fifth from apex, bends outward a little, and is dentated to vein 2, where it runs straight in and down in a short thick line to the hinder margin at two thirds, and is continued on the hind wing nearer the middle of the wing, and is curved outwards in its centre; on this wing there is also a lunule at the end of the cell; marginal line luteous, nearly white, composed of lunules on fore wings, joined together and in one example entire on hind wings; cilia luteous white, intersected by a brown macular band. Underside paler, markings as above; body and legs whitish, the latter with some brown bands.

Expanse of wings  $\frac{9}{16}$  inch.

Cherra Punji. Three examples.

The fore wings are unusually square, the hinder margin being very nearly as long as the costa.

#### Genus EBULEA, Guen.

##### 6. *Ebulea intensalis*, sp. n.

♂. Chocolate-brown, very variable in colour, some examples nearly pure brown, and every intermediate between that colour and bright chocolate. Wings with the lines and spots brown, the former fairly distinct: fore wings with a spot at the end of cell, sometimes indistinct; interior line curving outwards from costa one sixth from base to hinder margin at one third; exterior line composed of lunules from costa one third from apex, curving outwards almost from the costa itself, with an evenly round curve to vein 2, where it bends inwards, and then straight down to the hinder margin at two thirds: hind wing with a discal line, with an outward curve in the middle, generally lighter than the fore wings, but not always; marginal line brown, with pale lunules; cilia brown, with pale tips, in some specimens half brown and half pale. Underside: body, legs, and wings pale chocolate-grey; wings with the outer line distinct, and composed of black spots on the veins; fore legs with brown bands.

Expanse of wings 1 inch.

Cherra Punji. Numerous examples.

#### Genus CIRCOBOTYS, Butler.

##### 7. *Circobotys acutangulalis*, sp. n.

♂. Palpi ochreous, with grey tip; antennæ, head, body, and wings pale ochreous. Fore wings very acute, with the costal space for two thirds from the base suffused with dark grey; a band of the same colour on the outer margin, extending for one third from the apex immediately below the costa, which is

ochreous, straight down to the hinder angle of fore wings, including a darker band of grey from the apex running below the costal yellow line, and then straight down the outer side of the broad band, and this dark band is continued on the outer margin of hind wings, narrowing gradually and terminating before reaching the anal angle; transverse lines dark bright ochreous and nearly straight—one subbasal on fore wings, indistinct, continued on hind wings, inclining towards anal angle; the second at one third, also continued on hind wings and inclining towards anal angle; third medial; fourth a mere streak from costa a little on the inside of the marginal band. The hind wings are whitish on the costal and abdominal marginal spaces, and the two transverse lines are limited to the yellow portion of the wing; cilia grey, interlined with black, and the outer margin of the wings has some black points, which are more distinct on hind wings. Underside: body, legs, and wings white, the marginal band of the wings faintly visible.

Expanse of wings  $\frac{9}{10}$  inch.

Cherra Punji. Two examples.

#### Genus CROCIDOPHORA, Led.

##### 8. *Crocidophora distinctalis*, sp. n.

♂. Palpi ochreous above, white beneath; antennæ, head, body, and wings above of a uniform warm dark ochreous, somewhat of the tint of *Sylepta caldusalis*, Walker, but clearer and darker. Fore wings with the costa brownish, a grey spot at end of cell; a sinuous, indistinct, thick grey discal line or shade from the centre of the hinder margin to the costa one fifth from apex and close to the upper end of a broad, submarginal, straight, and fairly uniform grey band, which is also continued across the hind wing; the costa of this wing is whitish, and there are indications of the continuance of the discal line of fore wings crossing its centre; cilia concolorous with the wings. Underside much paler, with the submarginal band distinct and the raised scales near base of fore wings blackish; body and legs whitish, fore legs with brown bands.

Expanse of wings  $1\frac{2}{10}$  inch.

Cherra Punji. Three examples.

I have had an imperfect specimen of this species from Sikkim unnamed in my collection for some years.

##### 9. *Crocidophora discolorata*, sp. n.

♂. Palpi dark ochreous, white beneath; antennæ, head, body, and wings dull ochreous, the tint of ground-colour of

the wings being greyer than in *C. limbolalis*, Moore. Fore wings with the costal and basal portion suffused with dark greyish ochreous, and a broad marginal band of the same colour on both wings, widest on the costa, narrowing hindwards very gradually on both wings, leaving a pale discal band-like space, limited internally on both wings by the outer lines, which are nearly straight downwards; interior line on fore wings indistinct, from costal third to middle of hinder margin, on hind wings obsolete; cilia pale dull ochreous; a grey spot at end of cell of fore wings. Underside pale ochreous grey, markings as above; body and legs white, fore legs with brown bands.

Expanse of wings  $\frac{9}{10}$  inch.

Cherra Punji. Several examples.

A smaller insect than *C. limbolalis*, Moore; the marginal band narrower and paler, being merely a darker shade of the ground-colour of the wings, and not purple as in *limbolalis*; the transverse lines similarly disposed.

Genus LEUCOCRASPEDA, Warren.

10. *Leucocraspeda nissoralis*, sp. n.

♂. Palpi chestnut-red, white beneath; thorax and basal portion of abdomen white; head, fore part of thorax, and remainder of abdomen tinged with pale reddish grey; the lower basal half of fore wings and costal portions (broadly) of hind wings white, the rest of the wings with the ground-colour suffused with very pale luteous grey, and over this colour there is a darker suffusion of clear chestnut-red on the fore wings, on the basal half of costa, and the outer portions of the wing, with the exception of a large patch on the costa at the apex, which is left luteous grey; these two red spaces are joined together by a dark brown bar from the middle of the costa, which runs to a little below the middle of the outer margin: the hind wing has also the outer margin broadly suffused with chestnut-red. A brown lunule at end of cell of fore wings, a brown point at end of cell of hind wings; fore wings with an interior, outwardly curved, thin, and sinuous brown line, and a similar exterior line across both wings, dentated in the central outward curves on both wings; marginal line brown, lunular; cilia grey, interlined with brown. Underside: body, legs, and wings white, the bar on fore wing and outer lines visible.

Expanse of wings  $\frac{9}{10}$  inch.

Cherra Punji. Several examples.

Wings shaped as in *L. illectalis*, Walker; transverse lines similarly disposed.

## Genus PALIGA, Moore.

11. *Paliga fuscicostalis*, sp. n.

♂. Palpi reddish ochreous, white beneath; antennæ, head, body, and wings ochreous grey, but darker and more ochreous than in either *P. damastesalis*, Walk., or *P. suavalis*, Walk. Hind wings with the costal portion whitish: fore wings with the costal border brownish and with a similarly coloured broad marginal band, with an irregular inner limitation, and which does not reach the apex; inner and outer transverse lines indistinct, the former hardly visible, the latter sinuated, bent outwardly above, then much bent inwards to the indistinct lunule at the end of the cell, then sinuous to the hinder margin beyond the middle; hind wings with a similar recurved discal line, very indistinct. Underside: wings, body, and legs whitish, with the brownish border of the upper-side and the discal line visible.

Expanse of wings  $\frac{8}{10}$  inch.

Shillong. Two examples.

## Genus PROTONOCERAS, Warren.

12. *Protonoceras humilis*, sp. n.

♂. Palpi brown, white beneath; head, body, and wings grey-brown; abdomen with pale segmental lines. Wings not uniform in colour, being irrorated with brown and black atoms, which are thick in parts; lines black: fore wings with interior line curved outwardly, invisible in most examples; exterior line from costa at one fifth from apex, curves a little outwardly from the costa, then incurved slightly, then outwardly in the middle (but only slightly), where it is formed of small lunules, again bent inwards and then to the hinder margin at two thirds: hind wings with a recurved discal line, with black suffusion in the middle in some specimens; both wings with a marginal lunular black line, grey cilia, interlined with brown and with brown tips. Underside whitish: fore wings with a brown spot in the cell, two at the end; hind wings with a spot at the end of the cell and the outer and marginal lines of both wings brown; fore legs brown.

Expanse of wings  $\frac{7}{10}$  inch.

Cherra Punji. Many examples.

13. *Protonoceras nictitans*, sp. n.

♂. Palpi brown, white beneath and at the tips, top of head pure white; body and wings purplish grey, somewhat as in *P. tropicalis*, Walker, but paler and glossed. Wings with the spots and lines brown: fore wings with a spot within the cell and another at the end, rather close together, and with a square white space between them; no interior line visible; exterior

line formed of curved lunules, the central part of the line curving a little outwards, then bent inwards, then another small outward curve before it reaches the hinder margin at two thirds: hind wing with a similar discal line, but more deeply curving outwards in its middle; marginal line of both wings pale, with brown lunules; cilia concolorous with the wings; the apex of fore wings is pale, and there is a pale shade outside the upper portion of the exterior line. Under-side: body, legs, and wings white, outer portion of wings and cilia grey; cell-spots and outer line distinct; a cell-spot on hind wings.

Expanse of wings  $\frac{9}{10}$  inch.

Cherra Punji. Several specimens.

Wings shorter than in either *P. tropicalis*, Walker, or *P. sericea*, Butler.

Genus PRIONOPALTIS, Warren, MS.

14. *Prionopaltis subdentalis*, sp. n.

♂. Palpi purple-brown; antennæ, head, body, and wings of a uniform greyish-olive colour. Wings with a brown mark at the end of each cell: fore wings with a small brown spot within the cell; interior line outwardly curved, but only indications of it; exterior line commences with two white lunular marks at the costa one fifth from apex, bulges out a little, forming an indistinct and rather flattened grey line, with pale dentations, then inwards on vein 2 and then to the hinder margin at two thirds, and is continued in the usual form across the hind wings, with an outward curve in the centre, and edged outwardly with whitish throughout; marginal points black; cilia concolorous with the wings, with white spots at its base. Underside: body, legs, and wings whitish, with the markings on the wings visible.

Expanse of wings  $\frac{9}{10}$  inch.

Cherra Punji. Several examples.

Genus ACHARANA, Moore.

15. *Acharana subalbescens*, sp. n.

♂ ♀. Palpi dark red-brown, white beneath; antennæ, head, body, and wings pale olive-brown. Wings with the spots and markings brown, a lunule at the end of each cell: fore wings with a dot within the cell rather close to the end; an interior line, slightly sinuous and outwardly curved; an exterior more or less lunular line from the costa almost straight down to vein 4, then it bulges out a little with three dentations to vein 2, where it abruptly runs in, and then straight to the hinder margin at two thirds, is continued across the hind wings with an outward curve in the middle; anteciliary line pale, cilia concolorous with the wing. Underside pale

grey, with the cell-spots and outer lines distinct; body and legs white; fore legs with two brown bands.

Expanse of wings  $1\frac{1}{10}$  inch.

Cherra Punji. Many examples.

A much larger insect than *A. treusalis*, Walker; the colour darker, clearer, and smoother, the lines somewhat similarly disposed.

#### Genus MARGARONIA, Hübn.

##### 16. *Margaronia warrenalis*, sp. n.

♂. Antennæ white; palpi dark brown-pink, white beneath; head, body, and wings silvery white; collar with a brown-pink band in front. Wings lightly clothed, nearly semi-hyaline: fore wings with a pale brown-pink costal band; a brown subcostal dot near base; a yellowish spot ringed with brown touching the costal band a little beyond; a pale lunule ringed with brown at the end of the cell; a pale brown-ringed spot near hinder margin just before the middle; a faint grey discal thick line, curving outwards and then inwards: hind wing with the discal line continued to the anal angle, and at the end of the cell a grey lunule with a brown dot at its lower end; marginal black points on both wings. Underside: wings, body, and legs pure white; wings with the markings showing through.

Expanse of wings  $1\frac{1}{10}$  inch.

Cherra Punji. Many examples.

Between *M. celsalis*, Walker, and *M. nigropunctalis*, Brem., = *submarginalis*, Walker.

#### Genus GLYPHODES, Guen.

##### 17. *Glyphodes ernalis*, sp. n.

♂. Palpi blackish brown, yellowish grey beneath; head, body, and fore wings purplish brown. Fore wings with two large white spots—the first just before the middle, broad on the hinder margin, suddenly narrowing into a point within the cell; the other of a similar size, discal, diamond-shaped: hind wings with a little more than the basal half white and semi-hyaline, the outer half the same colour as the fore wing, this band broadest on the costa and gradually narrows downwards; cilia white, brown in the central portion of the fore wings. Body below and legs white; tibiæ brown above.

Expanse of wings 1 inch.

Shillong and Cherra Punji. Many specimens.

Between *G. actorionalis*, Walker, = *Zelleri*, Led., and *G. bicolor*, Swainson; has more pointed and longer wings than either, the spots are differently shaped, and the white line outside the discal spot, which terminates in a small white spot on the costa in both those species, is absent.

## Genus AUTOCHARIS, Warren, MS.

18. *Autocharis amethystina*, sp. n.

♂. Palpi pinkish brown; antennæ, body, and wings luteous white; thorax with a pinkish-brown stripe on each side. Fore wings with the costal border pinkish brown; a broad pinkish-brown marginal band: hind wings with a narrow similar band; the inner edge of both bands dark brown, sinuous, with a dentation into the band on the fore wings in its centre; cilia of both wings pinkish white. Underside: legs, body, and wings white; the wings are semi-hyaline, and the marginal band shows through the wing.

Expense of wings  $\frac{6}{10}$ — $\frac{7}{10}$  inch.

Cherra Punji; one example. North Kanara; two examples.

Allied to *A. fessalis*, Swinhoe, which Warren makes the type of the genus.

**XXIII.**—*Vestigial Stigmata in the Arachnida.* By H. M. BERNARD, M.A. Cantab. (Huxley Laboratory, Royal College of Science, South Kensington).

IN a preliminary note published in this Journal \*, and later in a fuller paper published by the Linnean Society †, I called attention to a row of scar-like markings in certain Chernetidæ which segmentally repeat the functional stigmata. These markings are, so far as one can see with the best microscopic appliances, nothing but scars. Hansen ‡, who has also seen them, believes them to be lyriform organs. At first, after reading Hansen's paper, it seemed to me that they might well be very large lyriform organs (as to the functions and morphology of which we really know nothing §) and at the same time the remains of vanished tracheal invaginations. I have since compared the scars with lyriform organs in the Chernetidæ, Araneidæ, Solpugidæ, Thelyphonidæ, and Phrynidæ, and am convinced that they are not lyriform organs at all, but simply the scars of apertures which have now closed. I have mapped out the abdominal surface of my original specimen (figured in the second paper above referred to), measuring, by means of an eyepiece micrometer, the relative positions of the scars and the bristles, which, as is well known, tend in this group to be repeated segmentally. I am quite satisfied

\* "Additional Notes on the Origin of the Tracheæ from Setiparous Glands," Ann. & Mag. Nat. Hist. 1893, xi. p. 24.

† "Notes on the Chernetidæ, with Special Reference to the Vestigial Stigmata and to a new Form of Trachea," Journ. Linn. Soc., Zool. vol. xxiv. p. 410.

‡ 'Organs and Characters in different Orders of Arachnids,' Copenhagen, 1893.

§ These organs are so minute and so scattered that it seems to me that no trustworthy experiments are possible (cf. Gaubert's "Recherches sur les Arachnides," Ann. Sci. Nat. xiii. 1892).